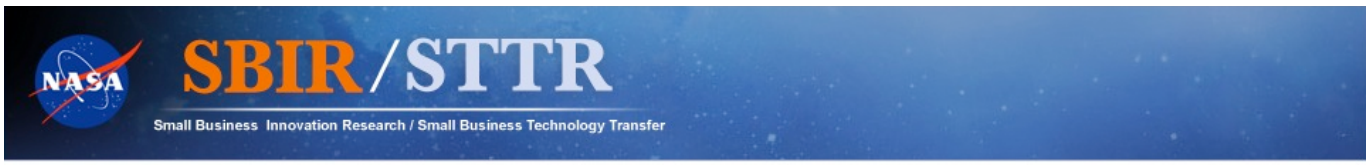

HUMAN EXPLORATION AND OPERATIONS 2014 **[1]**

Submitted by Anonymous (not verified) on Mon, 11/11/2013 - 13:12

The Human Exploration and Operations Mission Directorate (HEOMD) is chartered with the development of the core transportation elements, key systems, and enabling technologies required for beyond-Low Earth Orbit (LEO) human exploration that will provide the foundation for the next half-century of American leadership in space exploration. This new deep space exploration era starts with increasingly challenging test missions in cis-lunar space, including flights to the Lagrange points, followed by human missions to near-Earth asteroids (NEAs), Earth's moon, the moons of Mars, and Mars itself as part of a sustained journey of exploration in the inner solar system. HEOMD was formed in 2011 by combining the Space Operations Mission Directorate (SOMD) and the Exploration Systems Mission Directorate (ESMD) to optimize the elements, systems, and technologies of the precursor Directorates to the maximum extent possible. HEOMD accomplishes its mission through the following goals:

- Development and use of launch systems and in-space transport capabilities permitting exploration of various regions of space.
- Development of space habitats that permit the processing and operation of physical and life science experiments in the space environment.
- Development of means to return data and explorers to Earth from these in-space operations.

HEOMD encapsulates several key technology areas, including Space Transportation, Space Communications and Navigation, Human Research and Health Maintenance, Radiation Protection, Life Support and Habitation, High Efficiency Space Power Systems, and Ground Processing/ISS Utilization. These areas of focus, along with enabling technologies and capabilities, will continue to evolve synergistically as the directorate guides their development and enhancement to meet future needs. In addition, operational capacity will continue to grow by including these enhancements as other NASA programs develop new mission capabilities and requirements. To generate new capabilities and contribute to the knowledge required for humans to explore in-space destinations, HEOMD is responsible for:

- Conducting technology development and demonstrations to reduce cost and prove required capabilities for future human exploration.
- Developing exploration precursor robotic missions to multiple destinations to cost-effectively scout human exploration targets.
- Increasing investments in Human Operations and research to prepare for long-duration missions in deep space.
- Enabling U.S. commercial human spaceflight capabilities.
- Developing communication and navigation technologies.
- Maximizing ISS utilization.

HEOMD looks forward to incorporating SBIR-developed technologies into current and future systems to contribute to the expansion of humanity across the solar system while providing continued cost effective space access and operations for its customers, with a high standard of safety, reliability, and affordability.

(http://www.nasa.gov/directorates/heo/home/index.html [2])

Solicitation:
NASA SBIR 2014 Phase I Solicitation [3]
Mission Directorate:

Human Exploration and Operations [4]